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RESULTS OF THE MEETING OF THE JOINT SWFC/SWR/NWR/NWAFC ECOSYSTEMS PLANNING TASK FORCE, SEPTEMBER 9, 1987 and THE MEETING OF SWR/SWFC DIRECTORS AND ECOSYSTEMS PLANNING TASK FORCE TO DECIDE ON ECOSYSTEM OBJECTIVES AND SUB-STRUCTURE SEPTEMBER 10, 1987

by

David J. Mackett

ADMINISTRATIVE REPORT LJ-89-03

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JANUARY 1989

SWFC ADMINISTRATIVE REPORT LJ-89-03

Results of the Meeting of the

Joint SWFC/SWR/NWR/NWAFC Ecosystems Planning Task Force,

September 9, 1987

and

the Meeting of

SWR/SWFC Directors and Ecosystems Planning Task Force

to Decide on Ecosystem Objectives and Sub-Structure,

September 10, 1987

Summary

As a first step in planning the reorientation of SW research and management to an ecosystem or multispecies point of view, An Ecosystems Planning Task Force consisting of staff and scientists from the SWR, SWFC, NWC and NWAFC was established. The group met to generate and consider alternatives for Regional Marine Ecosystem objectives, RME sub-ecosystems, and objectives for sub-ecosystems for:

- The California Current Ecosystem (CCE)
- The Pacific Oceanic Ecosystems(s) (POE)

The Southwest Regional Director and Southwest Fisheries Center Director met with the Task Force to discuss alternatives and options generated by the Task Force and to decide on the ecosystem program structure and objectives to be employed in further planning efforts.

Task Force Results

What Happened and How

After introductory presentations establishing the purpose of the Task Force and the objectives for this meeting (Appendix A), a presentation of possible boundaries for defining the "California Current Ecosystem" was presented by Richard Parrish, PFEG. The group agreed that for purposes of this planning exercise the northern boundary should be set at the northern end of Vancouver Island, British Columbia, Canada, and the southern boundary at the convergence of the subtropical and tropical waters off Baja California, Mexico. The group established seventeen criteria which it thought should be considered for establishing good

objectives for the RME (Appendix B); afterwards the group generated and clarified the meaning of 19 objective statements for the California Current Ecosystem (Appendix C). A sub-committee informed by the discussion then drafted the preferred over-all RME objective for the California Current Ecosystem; the Pacific Oceanic Ecosystem objective was drafted by the sub-group along similar lines (Appendix D). Eight criteria for establishing sub-ecosystems were designated and discussed by the group (Appendix E). The Task Force was then divided into 5 sub-groups; one to work further on the Pacific Oceanic Ecosystem objective and sub-structure and four to consider the California Ecosystem.

Each sub-group was to consider alternative ways of dividing the entire ecosystem into sub-ecosystems being informed by the discussion of desirable criteria and, having done that, to suggest objectives for each sub-ecosystem. Four alternative sets of sub-ecosystem units were suggested for California Current sub-ecosystems (Appendix F). Three of these were judged to be very similar and were collapsed into a single alternative. Thus essentially two alternative sets of sub-systems were created by the group. One alternative represented, in essence, the current MBO structure featuring the separation of marine mammals; the other alternative was based on habitat types and species complexes and featured the integration of marine mammals with the fish.

Objective statements were generated by the group for the major sub-ecosystems: The Littoral, Pelagic, Demersal and Anadromous Complexes of Alternative 2 and the Protected Species group of Alternative 1.

The Pacific Oceanic Task Force established three alternative sets of sub-ecosystems and established draft objectives for the preferred alternative set (Appendix G). The entire group discussed the pros and cons of the California Current Alternatives and Objectives and the Pacific Oceanic Sub-Ecosystems (Appendix H) in preparation for presentation of the work to the Directors the following day.

The foregoing results achieved during the meeting of the Task Force was facilitated by the SWFC Planning Officer who introduced a series of "trigger questions" which the group members were asked to answer with their own ideas (Appendix I). The next day the Task Force convened for a brief time prior to the Directors' meeting to review the Directors' meeting agenda and their roles for the meeting, and to choose "spokesmen" for presenting the materials to the Directors. All Alternatives and Objectives were lettered by a draftsman and displayed on the walls in preparation for the Directors' briefing.

Ecosystems Planning Task Force Participants

J. G. Smith, Southwest Region, Convenor
D. J. Mackett, Southwest Fisheries Center, Facilitator

Task Force Members

George Boehlert
John Carr
John Dentler
Svein Fougner
Mark Helvey
Sam Herrick
Norris Jeffrey
Gene Kruse
Reuben Lasker
Bill Lenarz
Rod McInnis
Rick Methot
Richard Parrish
Steve Reilly
Bill Robinson
Gary Sakagawa
Ron Scheltens
Richard Shomura
Gary Stauffer

Director's Meeting

The Southwest Regional Director and Southwest Fisheries Center Director met to review the results of the Task Force and explicitly to decide upon the ecosystem objectives, sub-ecosystem structure, and objectives for the sub-ecosystems to guide the subsequent more detailed program planning of the Regions and Centers. The Task Force presented the results of its work, explaining the meaning and reasoning behind the alternatives it had developed. Discussions, questions and answers ensued. The Directors adopted the suggested definition of the California Current Ecosystem and Pacific Oceanic Ecosystem. Modifications were made to objective statements (substantial and editorial) in accordance with the Directors decisions; after lengthy debate and an airing of the issues, decisions were made concerning ecosystem sub-structures and objectives. It was noted during the discussion that many of the "sub-ecosystems" of the Pacific Oceanic Ecosystem were as large or larger (geographically) than the entire California Current Ecosystem.

The results of the Directors' decisions are given in Appendix J.

Next Steps

The next steps will require the definition of a program strategy to meet the stated objectives and a documentation of that process in the RME Objective Framework format for submission to Washington by October 1, 1987. The NMFS Office Directors will review the results and will submit their issues, comments, etc. at the forthcoming October 28, 1987 meeting of NMFS Directors.

Purpose of Planning Effort

Reorient NOAA's Living Marine Resource Science and Management from single species/fishery to multispecies/ecosystem focus.

- Improve understanding of dynamics in RME
- Define and establish data acquisition systems
- Develop multi-species models for research and forecasting
- Improve management and development

The Task at Hand

1. Begin the reorientation process by making informed decisions regarding the optimum, best, satisfactory-classifications and objectives.
2. Planning scientific and management program strategy to meet objectives.
3. Document the planning process in "RME Objective Frameworks".

RME Objective Framework

- Objective statement
- For each species group/ecological unit:

  ... Description
  ... Program Objective(s)
  ... Program Strategy

    - method of accomplishment
    - scientific objectives
    - operational objectives
    - performance measures

  ... Milestones (5 year projection)

System Lingo

Ecosystem = Mother Nature's system of living and non-living things, interacting for who knows what "objective".

Ecosystem Program = Mother NMFS' system of living and non-living things interacting for the achievement of an output from nature's ecosystem.

Criteria for Establishing Good RME Objectives

1. Political acceptability
2. Scientific credibility
3. Achievable within expected resources
4. Measurable
5. Consistent with national policy
6. Same for each ecosystem
7. Should be some generic nature to it (criteria)
8. Within the agency's area of responsibility
9. Contribute to the management of the fauna
10. Should apply to multispecies
11. Economic feasibility
12. Socially equitable
13. Fosters sub-ecosystem or species group analyses
14. Within agencies control or influence
15. Consistent with the agency's strategic objectives
16. Advances state of the science (knowledge of ecosystem)
17. Improves (or at least as good as) present objectives

Possible Objectives for the California Current Ecosystem

1. Conduct assessment studies of research components of ecosystems.

2. Understand complexities of CCE necessary to achieve sound conservation and management of LMR in the system.

3. Manage the living marine resources of the CC marine ecosystem for optimum yield or optimum sustainable population in a manner consistent with the conservation and management principles of the FCMA and MMPA.

4. Develop multi-species management measures which reduce discards by 50%.

5. Forecast the short-term and long-term effects of alternative harvest policies.

6. Maintain viable populations to maximize benefit of resource to users through rational utilization.

7. Identify and understand major interactions with other RMEs.

8. To advance the ability to manage fisheries of the California Current toward optimum allocation and utilization.

9. Achieve a better understanding of ecosystem production and the factors that influence the production of stocks utilized by the nation and translate that understanding into improved management practices to achieve conservation and to better provide an optimum level of net benefits to all U.S. citizens.

10. Specific objectives of MFCMA, MMPA, and ESA.

11. To increase our understanding of the CCE so that we can determine if the current objectives are valid and if we can manage the system with 50% rationality.

12. To improve knowledge of the populations and dynamics of the CCE in order to enhance and maintain a mutually beneficial interaction between resources and users.

13. Ensure that CCE continues to provide food, recreation and revenues.

14. Support adaptive management measures and regimes to improve the ability to forecast distribution and abundance of key species of the CCE.

15. Improve the conservation and management of living marine resources in the CCE by improving the ability to access and predict the conditions of CCE resources.

16. To accurately estimate CCE harvest by all users.

17. To develop satisfactorily the ultimate biological/social/oceanographic model of the CCE and man's interactions with it.

18. To insure the conservation of LMRs for the benefit of U.S. citizens.

19. Ensure the conservation of CCE living marine resources through an integrated program of management and research consistent with existing statutes.

Draft Ecosystem and Objective Statements for the California Current Ecosystem and Pacific Oceanic Ecosystem

California Current Ecosystem Objective Statement

To increase our understanding of the California Current ecosystem and the factors that influence the productivity of its living marine resources and to translate that understanding into improved management and provide maximum net benefit to the U.S.

Pacific Oceanic Ecosystems

Overall Objective

To increase our understanding of the Pacific oceanic ecosystems and the factors that influence the productivity of LMRs in order to improve conservation and management to provide benefit to the U.S.

Appendix E

Some Possible Criteria/Issues for Defining "Sub-Ecosystems" within each of the RME

1. Longitudinal: Littoral, Shelf, Slope
2. Common fishery
3. Political jurisdiction
4. Trophic level
5. Habitat type
6. Historical base
7. Physical processes
8. Biotic provences - Biogeographics provence

Alternative Sets of Sub-Ecosystems for the California Current Ecosystem

Sub-Ecosystem Groups

Alternative 1

1. Demersal Complex

   Finfish
   Shellfish

2. Pelagic Complex

   Finfish
   Sharks

3. Anadromous Complex

   Salmon, Steelhead

4. Coastal Marine Mammals/Turtles

Almalgamation of Alternatives 2, 3, 4 Used for Presentation

Littoral Complex

California halibut, crabs, sea otter, harbor seal, kelp bass, lobster, etc.

Pelagic Complex

Anchovy, mackerels, sardine, hake, herring, bonito, sea lions, squid, birds, etc.

Demersal Complex

- Shelf: Boccacio, chile, English, petrale, hake, elephant seal, sea lions, shrimp
- Slope: Dover, sablefish, grenadier, P.O.P., splitnose

Anadromous Complex

Salmon, shad, striped bass, sturgeons, steelhead, harbor seal, stellar sea lion

"Visitors" Complex

Billfish, tunas, great whales, fur seals

Alternative 2

1. Benthic Fishes and Appropriate Mammals/Birds

   - Littoral
   - Shelf
   - Slope
   - Deep

2. Pelagic Finfish, Shellfish and Appropriate Marine Mammals and Birds

3. Pelagic California Current Visitors

   - Billfish
   - Tunas
   - Mammals
   - Birds

4. Salmon/Trout/Marine Mammals

Alternative 3

1. Littoral Zone

   California halibut, crabs, otter, harbor seal, sea urchins, lobster

2. Coastal Pelagics

   Anchovy, mackerel, squid, herring, sardine, bonito

3. Shelf Groundfish

   Rockfish, shrimp, Pacific halibut, flatfish

4. Slope Groundfish

   Dover sole, sablefish, Sebastolobus

5. Migratory Oceanic Pelagic

   Tunas, shark, hake, billfish, sea lions, fur seals, whales

6. Anadromous Resources

   Salmon, shad, striped bass, sturgeon, steelhead

Alternative 4

1. Littoral Zone

   - inshore shallow water species
   - includes habitat protection
   - crab and estuaries
   - sportfish
   - sea otter
   - harbor seals

2. Coastal Pelagic

   - usual pelagic species
   - including hake
   - birds, marine mammals

3. Groundfish

   - includes hake, shrimp, scallops

   - Shelf
   - Slope

4. Anadromous

   - Salmon and other migratory spp.

5. Oceanic Pacific

   - billfish, pelagic sharks, saury, albacore

Sub-Ecosystem Objective Statements for California Current and Pacific Oceanic Ecosystem

California Current Littoral Complex Objective Statement

Assist the states in management of interjurisdictional resources and the restoration and maintenance of associated habitats to prevent negative impacts on the ecosystem.

Pelagic Complex Objective Statement

Manage pelagic complex in association with other resources at OY (with consideration to MMPA and ESA) for U.S. commercial and recreational fishing industry.

Demersal Complex Objective Statement

Manage demersal complex in association with other resources at OY (with consideration to MMPA and ESA) for U.S. commercial and recreational fishing industry.

Anadromous Complex Objective Statement

To assist in enhancing and managing salmon and steelhead resources subject to MMPA constraints, to achieve annual escapement goals and harvest levels established for 1988-1992 by the PFMC, U.S./Canada Salmon Commission, States, and Indian tribes with fishing rights.

Protected Species Objective Statement*

Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of associated commercial and recreational fisheries.

*This objective would only be operative with Alternative 1, setting out marine mammals and other protected species as a separate "sub-ecosystem".

Sub-Ecosystem Alternatives and Draft Objectives for the Pacific Oceanic Ecosystem

Subdivisions

Sub-Ecosystems

Alternative 1

Insular

- Bottomfish
- Crustaceans
- Precious Coral
- Monk seals and sea turtles

Pelagic

- Tuna - albacore
- Billfish/mahi-mahi
- Eastern tropical Pacific dolphins

Alternative 2

Insular

- Insular shelf
- Insular slope

Pelagic

- Tropical (20 degrees north - 20 degrees south)
- Transition zones (20 degrees-40 degrees N, S)

Alternative 3 (Recommended)

Insular

- Hawaiian Islands
- Indo-Pacific Islands
- Islands of Oceania
- Subtropical temperate islands/seamounts

Pelagic

- Eastern Tropical Pacific
- Central and Western Tropical Pacific
- North Pacific Transition Zone
- South Pacific Transition Zone

Draft Sub-Ecosystem Objectives

I. Insular

A. Hawaiian Islands

- Maintain target stock levels of insular species (including marine mammals and endangered species) to achieve optimum benefits while preserving artisanal fisheries.

- Conserve insular fisheries habitat productivity (including estuarine areas).

- Establish range of natural variability in populations of important species in response to physical factors.

B. Indo-Pacific Islands

- No action oor objectives required.

C. Islands of Oceania

1. Guam, CNMI, American Samoa.

   - Maintain target stock levels of insular species (including marine mammals and endangered species) to achieve optimum benefits while preserving artisanal fisheries.

   - Conserve insular fisheries habitat productivity (including estuarine areas).

   - Establish range of natural variability in populations of important species in response to physical factors.

2. Others

   - As requested, provide assistance in matters pertaining to fisheries, habitat, and protected species.

   - Provide data collection/processing assistance to assess status of stocks and management needs.

D. Subtropical-temperate islands/seamounts

- Monitor recovery of stocks and encourage international management for transboundary or international stocks of insular species.

Draft Sub-Ecosystem Objectives

II. Pelagic

- Encourage the conservation and management of pelagic stocks throughout their range through international cooperation (applicable to all four sub-ecosystems).

A. Eastern Tropical Pacific

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of associated commercial and recreational fisheries.

- Provide a continuing supply of tunas to the American market by maintaining world stocks of tropical tunas and by ensuring U.S. access to those stocks.

- Establish range of natural variability in populations of important species in response to physical factors.

- Provide information regarding functional relationships among tunas, dolphins, and their environment for management considerations.

B. Central and Western Tropical Pacific

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of associated commercial and recreational fisheries.

- Provide a continuing supply of tuna to the American market by maintaining world stocks of tropical tunas and by ensuring U.S. access to those stocks.

- Establish range of natural variability in populations of important species in response to physical factors.

- Encourage the conservation and management of pelagic stocks throughout their range through international cooperation (applicable to all four sub-ecosystems).

C. North Pacific Transition Zone

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of associated commercial and recreational fisheries.

- Expand the domestic harvest and processing of albacore from the Pacific Ocean by American commercial and recreational fishermen.

- Establish range of natural variability in populations of important species in response to physical factors.

- Establish the magnitude of effect of fisheries on non-target species.

D. South Pacific Transition Zone

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of associated commercial and recreational fisheries.

- Expand the domestic harvest and processing of albacore from the Pacific Ocean by American commercial and recreational fishermen.

- Establish range of natural variability in populations of important species in response to physical factors.

Trigger Questions

The following trigger questions were used to guide the progress of the Task Force.

1. In the context of reorienting NOAA's Living Marine Resources Science and Management Program, what important criteria should be considered for establishing "ecosystem program objectives?"

2. In the context of the ecosystem planning effort, what objectives should be accomplished by NMFS' management and research program for the California Current Ecosystem? (Pacific Oceanic Ecosystem?)

3. In the context of the ecosystems planning effort, what alternative sets of sub-ecosystems (species groups) should be established for the California Current Ecosystem? (Pacific Oceanic Ecosystem?)

4. In the context of meeting the ecosystem objective, what sub-ecosystem objectives should NMFS pursue?

Pacific Oceanic Ecosystem Sub-Ecosystem Objectives

I. Insular

A. Hawaiian Islands

- Manage stocks of insular species (including marine mammals and endangered species) and conserve habitat productivity to achieve optimum benefits.

B. Indo-Pacific Islands

- As requested, provide assistance in matters pertaining to fisheries, habitat and protected species.

C. Islands of Oceanic

1) Guam, CNMI, American Samoa

- Manage stocks of insular species (including marine mammals and endangered species) and conserve habitat productivity to achieve optimum benefits.

2) Others

- As requested, provide assistance in matters pertaining to fisheries, habitat and protected species.

- Provide data collection/processing assistance to assess status of stocks and management needs.

D. Subtropical-Temperate Islands/Seamounts

- Assess status of stocks and encourage international management for transboundary or international stocks of insular species.

II. Pelagic

- Encourage the conservation and management of pelagic stocks throughout their range through international cooperation. (This is applicable to all sub-ecosystems.)

A. Eastern Tropical Pacific

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of commercial and recreational fisheries.

- Support international management to provide a continuing supply of pelagic resources to American fishermen by maintaining stocks.

- Provide information regarding functional relationships among fish and protected species and their environment for management considerations.

B. Central and Western Tropical Pacific

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of commercial and recreational fisheries.

- Support international management to provide a continuing supply of pelagic resources to American fishermen by maintaining stocks.

C. North Pacific Transition Zone

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of commercial and recreational fisheries.

- Support international research and management to provide for a continuing supply of pelagic resources to American fishermen.

- Reduce mortality of marine mammals, birds and fish caused by debris.

D. South Pacific Transition Zone

- Achieve optimum population levels of protected species within the requirements of the MMPA and ESA while permitting appropriate levels of commercial and recreational fisheries.

- Support international research and management to provide for a continuing supply of pelagic resources to American fishermen.

Ecosystem Program Objectives and Substructure Adopted by the Southwest Regional Director

California Current Ecosystem Program Objective

To understand the California Current ecosystem and the factors that influence the productivity of its living marine resources and to translate that understanding into improved management that provides for the conservation and optimum use of those resources.

Pacific Oceanic Ecosystem Program Objective

To understand the Pacific Oceanic ecosystem and the factors that influence the productivity of its living marine resources and to translate that understanding into improved management that provides for the conservation and optimum use of those resources.

Pacific Oceanic Ecosystem

Sub-Ecosystems

Alternative 3 (Accepted)

Insular

- Hawaiian Islands
- Indo Pacific Islands
- Islands of Oceania
- Sub-Tropical Temperate Islands/Seamounts

Pelagic

- Eastern Tropical Pacific
- Central and Western Tropical Pacific
- North Pacific Transition Zone
- South Pacific Transition Zone

California Current Ecosystem

Sub-Ecosystems

None

Program Objective Statements as Adopted

by Southwest Regional Director

Littoral Complex

Assist the States in management of inter-jurisdictional resources and the restoration and maintenance of associated habitats.

Pelagic Complex

Manage pelagic complex in association with other resources at OY with consideration to MMPA and ESA.

Demersal Complex

Manage demersal complex in association with other resources at OY with consideration to MMPA and ESA.

Anadromous Complex

To assist States and Indian tribes to achieve management goals for anadromous resources.

Protected Species

Manage populations of protected species within the requirements of the MMPA, ESA and FCMA, while permitting appropriate levels of associated commercial and recreational fishing.